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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
CHAWLA, JYOTI	
ART UNIT	**PAPER NUMBER**
1761	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/03/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/735,421	HEKAL, IHAB M.	
	Examiner	Art Unit	
	Jyoti Chawla	1761	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The amendments filed on January 4, 2007 have been entered. Claims 1, 10 and 11 have been amended, claims 112-14 have been added. Claims 1-14 are pending and examined in the present office action.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite for the recitation of "comprising the steps of forming a package of said food product and covering said food product with a micro perforated covering" as it is unclear whether the claim, as recited, addresses "package of said food product" where the food product is in shape of a package to hold some filling, such as, pocket pita or pasta shell or the term means a package for the food product.

Further regarding claim 1, it is unclear as to whether the covered package containing the food product is placed in a container with gas or whether the food product is placed in the container with gas and then covered with a micro-perforated covering.

Furthermore in claim 1, as recited, it is unclear as to where in the package the halogen cuprous compound is introduced. It is unclear whether the cuprous halogen compound is in the container with the food product, or is inside or outside the micro-perforated covering.

Claim 1 is also indefinite for the recitation of micro-perforated covering. The claim and the specification do not define what covering qualifies as a micro-perforated covering, e.g., whether, ordinary paper or plastic would be considered micro-perforated. Thus for

the purposes of prior art comparison, any covering that is permeable to gas, such as, oxygen would be considered to be micro-perforated covering.

Claim 12 recites the limitation "said cuprous compound" in line 1 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 14 is indefinite for the recitation of "barrier bag and is used during transport of said food product", where it is unclear as to what is meant by the term "barrier bag", e.g., Is paper bag a barrier bag? Or is cloth bag a barrier bag?
It is also unclear as to what specifically is the bag a barrier against, e.g., paper bag may be a barrier bag for transport, however, the paper bag may not be an adequate barrier against moisture transfer. Clarification and /or correction is required. For the purposes of prior art comparison, a container or bag, which is essentially impermeable to oxygen and is used for transport or storage of the food product would be considered as a barrier bag.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

(I) Claim rejections made under 35 U.S.C. 102(b) as being anticipated by Kobayashi et al. (JP 05003752) (Abstract and Machine translation) in the office action Mailed August 29, 2006 have been withdrawn in light of applicant's amendments.

(II) Claim rejections made under 35 U.S.C. 102(b) as being anticipated by Shaklai et al (US 6042859) in the office action Mailed August 29, 2006 have been withdrawn in light of applicant's amendments.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

(A) Claims 1, 9-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al (AU 9218559 A) (Abstract and Machine translation), in view of Merriman et al (US 2003/0054072).

The references and rejection are incorporated herein and as cited in the office action mailed August 29, 2006.

Note: The extent of exposure of foods, such as, meats, to an atmosphere consisting of carbon monoxide (hereinafter CO) would depend on the concentration of CO in the atmosphere and the time for which the food was exposed to CO.

Kobayashi et al, hereinafter Kobayashi teaches addition of CO to the meat to improve quality and also to prevent the discoloration of meat and fish upon storage (Abstract and Translation paragraph 0008 and 0009) as recited by the applicant. Kobayashi teaches that the meat is exposed to CO for some time such as 2-6 hours depending on the cut and size of meat and later removed (Translation paragraphs 0012-0015). The hemoglobin or myoglobin (pigments in meat) in meat and fish are compounds that absorb CO and change to metmyoglobin (Translation paragraphs 0019-0022). The reference also teaches that the package containing meat after the removal of CO may be filled with nitrogen or carbon dioxide (Abstract and Translation paragraphs 0023-0025) as recited by the applicant in claim 1. Kobayashi further teaches removing excess of CO from the food package by the physical means. Thus Kobayashi is solving the same problem as the applicant of reducing the exposure of food to CO. However, Kobayashi does not teach the addition of a separate sachet (pack) inside the main food package that would contain the CO and /or O_2 absorber as recited by the applicant in claims 9-12. Therefore, one of ordinary skill in the art would look to the art of food packaging for other ways for removal of CO from a mixture of gases.

Merriman et al, hereinafter Merriman, teaches a modified atmosphere package especially for meats, where the meat is packaged in a confined container. The atmosphere in the container taught be Merriman, is modified by physically removing the gases and forcing a modified atmosphere containing CO_2, N_2 and CO, sealing the package with an oxygen scavenger to absorb the residual O_2 in the package after it has been sealed to ensure microbial safety (Application Publication paragraphs 0010 and 0054). Meat in the inner package is placed in a tray and wrapped in a layer where at least a portion of the wrapping is substantially permeable to oxygen (i.e., micro-perforated) (Page 2, paragraph 0011). Merriman teaches that the package contains meat. The pigments hemoglobin and myoglobin from the meat absorb CO and convert to concarboxyhemoglobin/ carboxymyoglobin which maintain the fresh red color of the meat. Merriman further teaches addition of oxygen (gas) scavenger/ absorber sachet (pack) inside a food package in such away that the sachet does not come in contact with the food (Application Publication figures 2, 3, 6 a-d, item 28) as recited in claim 9 and 11. The oxygen absorber as taught by Merriman can be packaged separately and can be activated by an accelerator that comprising a copper compound (Application Publication paragraphs 0054 and 0073) as recited in claims 10-12. The oxygen uptake accelerator taught by Merriman, is water or aqueous solutions of acetic acid, citric acid, sodium chloride, calcium chloride, magnesium chloride, copper or combinations thereof (Paragraph 0054 and figure 2, item 28). Therefore, the oxygen scavenger package with the accelerator, as taught by Merriman, contains copper compound in the presence of chloride salts, i.e., a halide copper compound as recited in claim 1 compound in the solution as recited in claim 2. Thus Merriman teaches of an oxygen scavenger pack, with activator, that would have copper chloride (i.e., cuprous chloride) and would be capable of absorbing CO. Regarding claims 1, 9-12, food packages with modified atmosphere containing CO (Kobayashi) to increase the shelf life and preserve good color were known at the time of the invention. Physical means such as vacuum pump (Kobayashi), or by a combination of physical and chemical means (Merriman) were known to be used for the removal of excess CO and / O_2 from a food package. Therefore, one of ordinary skill in the art at the time of the invention would have been

motivated to modify Kobayashi to include additional chemical means of removing gases, such as by using absorber/scavenger packages (with activator chemicals), to food packages, as taught by Merriman, to ensure a rapid and complete removal of residual volume of unwanted gases from food packages and also to extend the shelf life of food products in modified packages. One of ordinary skill in the art would have been further motivated to put the gas absorbing compound in a separate package and not have the chemicals in direct contact with the food, as taught by Merriman, to ensure food safety, which is also the intent of the applicant in claims 9-12.

Regarding claim 13, Kobayashi (English abstract and Translation paragraph 0009) and Merriman both teach packaging of a meat product as instantly claimed.

Regarding claim 14, Kobayashi teaches of a gas impermeable food (i.e., meat) package for storage and transport, made from vinylidene chloride resin (Translation paragraphs 0007, 0018 and 0024), which is a barrier bag as instantly claimed. Furthermore, Merriman teaches of a modified atmosphere meat package where the inner meat package is contained in an outer gas impermeable bag (i.e., barrier bag) that contains one or more inner meat packages, modified atmosphere and sachet of gas absorber (Figures 1 and 7) for storage and transportation. As instantly claimed.

(B) Claims 2-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi, in view of Merriman as applied to claims 1, and 9-14 above, further in view of combination of Matsuura et al. (US 4818255) and Hirai et al. (US 4460384).

Kobayashi and Merriman have been applied to claims 1, and 9-14 above.

Kobayashi and Merriman teach exposure of food to CO for prolonging the shelf life and obtaining a desirable color of food. The references also teach removal of CO and / or O_2 after a few hours by either vacuum (physical) or chemical means (scavenger pack). Kobayashi, modified by teachings of Merriman, teaches that the oxygen scavenger package includes sodium, calcium and magnesium chlorides along with copper as an activator. However, the references do not include specific copper and aluminum

compounds, such as cuprous bromide, cuprous aluminum chloride etc., to absorb CO present in the package as recited by the applicant in claims 2-8. Therefore, one of ordinary skill in the art would have been motivated to turn to other sources where the problem of removing CO from an atmosphere of gases or space has been solved. One would have been motivated to see if copper based compounds have been found effective in removal of CO. Matsuura et al and Hirai et al both solve the problem of removing CO from a space containing a mixture of gases and teach compounds and methods for the separation of carbon monoxide (CO).

Matsuura et al, hereinafter Matsuura, teaches gas separation materials and discloses that aqueous solutions of cuprous chloride or cuprous aluminum chloride have been used to absorb CO (Column1, lines 35-37, 52-56, 60-62). Matsuura also teaches that the copper salts used can either be monovalent (cuprous), or bivalent (cupric) salts. The reference includes cuprous chloride, cuprous bromide and cupric sulfate among preferred staring materials for the separation and purification of CO (Column 4, lines5-48). Although Matsuura does not include cuprous sulfate in the list of preferred copper compounds to use, the reference teaches that cuprous as well as cupric compounds can be used to absorb CO, thus teaching of cuprous sulfate. Matsuura further teaches that the removal of CO, as well as O_2 can be done using the same material. Thus Matsuura teaches that any copper salt, monovalent or divalent, can be used as a starting material to absorb CO, such as, copper chloride, bromide and sulfate, therefore, Matsuura teaches the copper compounds recited by the applicant in claims 2-4.

Similarly Hirai et al., hereinafter Hirai, teaches a solution to the same problem of removal of CO from a mixture of gases, by using a copper compounds. The process involved contacting CO with a copper chloride suspension in hydrochloric acid (Column 1, lines 42- 48). Hirai further teaches contacting the gas mixture with (a) at least one copper (I) halide, i.e., cuprous chloride (CuCl), cuprous bromide (CuBr), cuprous iodide etc., (b) at least one aluminum (III) halide, i.e., aluminum tri-chloride ($AlCl_3$), aluminum tri-bromide ($AlBr_3$), etc., (c) at least one compound with two benzene nuclei. Hirai also teaches that the halides of copper and aluminum can be either used alone or in

combination (Column 2, lines 60-65 and Column 4, lines 28-36). Cuprous halides, i.e., CuCl or CuBr, when combined with $AlCl_3$ or $AlBr_3$, in acidic medium form complexes such as $CuAlCl_3$ (cuprous aluminum tri-chloride) and HCl (hydrochloric acid) OR $CuAlCl_4$ (cuprous aluminum tetrachloride) and $CuAlBr_3$ (cuprous aluminum tri-bromide) and HCl (hydrochloric acid) OR $CuAlBr_4$ (cuprous aluminum tetra bromide), as recited by the applicant in claims 5-8. Thus Hirai teaches of separation or removal of CO from other gases or chemicals by using copper (cuprous) and aluminum halide compounds, either separately or combined together, as recited in claims 2, 3, 5-8.

Thus it was known at the time of the invention to have a separate O_2 absorber with copper based activator in a sachet inserted in the meat packages (Modified Kobayashi of claims 1, 9-14). It was also known that any copper salt can be used as a starting material to absorb CO, including copper and aluminum halides, either alone or in various combinations, as recited by the applicant in claims 2-8 (Matsuura and Hirai). Further it was known that copper salts are also effective in removal of oxygen (Column 4, lines 5-10) (Matsuura). Therefore, one of ordinary skill in the art at the time of the invention would have been motivated to further modify Kobayashi and introduce any of the copper and/ or aluminum salt(s) (preferably halide compounds), such as, cuprous chloride, cuprous bromide, cuprous aluminum tri-chloride, or cuprous aluminum tri-bromide, cuprous aluminum tetra-chloride, cuprous aluminum tetra-bromide, as taught by Hirai and Matsuura, in order to ensure a more complete and rapid removal of the undesirable gases (CO and O_2) from the modified food package. One would have been further motivated to use a separate pack or sachet containing the absorbing compounds, to maintain the food safety by keeping the chemicals away from being in direct contact with food.

Response to Arguments

Applicant's arguments dated January 4, 2007 have been fully considered, but they are not persuasive.

i) In response to applicant's argument that there is no suggestion to combine the references (Remarks page 4), the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Kobayashi teaches of exposing the food to carbon monoxide and subsequently removing the CO to avoid excessive exposure of the food to CO, which is the same problem the applicant is trying to solve. Kobayashi teaches of a physical means of extraction of CO, whereas the applicant claims a chemical means. Kobayashi teaches of packaging the food in a modified atmosphere package with nitrogen or carbon dioxide, which are two of the gases recited in claim 1. Therefore, one of ordinary skill in the art at the time of the invention would have been motivated to look to the art to find other ways or means of removing undesirable gases including CO from a modified atmospheric package. Merriman teaches of chemical means of removal of excess oxygen and CO as discussed above from a modified food package. The chemical activator for the gas absorber is a copper halide-containing compound as recited by the applicant. Matsuura and Hirai are the references that are relied upon to show that cuprous and cupric halide compounds (as recited in claims 2-8) were known for their property of separation of CO from a mixture of gases, which is also the intent of the applicant. Thus applicant's argument is not persuasive absent any clear and convincing evidence and arguments to the contrary.

ii) In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Therefore, the argument that none of the references teach the invention in its entirety is not persuasive.

iii) In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., Kobayashi does not have CO in the package) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). As recited the claim describes " A method of treating a food product, said method comprising ...filling a container with *a gas* selected from a group consisting of CO_2, N_2 and CO". Thus as recited the container of claim 1 does not have to contain CO. Kobayashi teaches of packaging the food in a modified atmosphere package with CO_2, N_2 which are two of the gases recited in claim 1. Thus the prior art of record does teach of a package for food as recited.
Thus applicant's arguments have been fully considered and have not been found persuasive and claims 1-14 are rejected for reasons of record.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jyoti Chawla whose telephone number is (571) 272-8212. The examiner can normally be reached on 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on (571) 272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jyoti Chawla
Examiner
Art Unit 1761

KEITH HENDRICKS
PRIMARY EXAMINER